Executive Summary

Proposal

On June 18, 2001 Fond du Lac Energy Center, LLC (Calpine), a wholly owned subsidiary of Calpine Corporation, filed an application at the Commission for a Certificate of Public Convenience and Necessity (CPCN) under Wis. Stat. § 196.491(3) and Wis. Admin. Code ch. PSC 111, to construct and operate a large generating facility, associated high voltage transmission and water facilities in the town of Fond du Lac, Fond du Lac County. Amendments to the application were filed in December, 2001 and April, 2002. On May 9, 2002, the Commission determined that Calpine's application was complete.

Calpine is a fully integrated independent power producer. The new facility would be operated as a merchant plant as defined in Wisconsin Act 204, the Electric Reliability Act, which legalized the development of wholesale merchant plants in the state. Calpine would sell electric power generated by the plant at market-based rates to investor-owned utilities, cooperative utilities, power marketers, and other purchasers for resale in Wisconsin and throughout the Midwest region. At this time, Calpine has no pre-existing power purchase arrangements with public utilities for power generated at the proposed facility.

Project Location

Calpine has proposed that the power plant be located on one of two sites in the town of Fond du Lac. The Scott Road Site is a 47.5-acre parcel located along Hickory Road southwest of U.S. Highway (USH) 41. Surrounding land use is primarily industrial and agricultural in transition. The River Road Site is a 50-acre parcel south of USH 151 and directly west of the existing South Fond du Lac Generating Station on River Road. The two alternative sites are shown on Figure 1.

Figure 1 **Project location map**

Project Description

As proposed by Calpine, either site would contain two natural gas-fired combustion turbines with heat recovery steam generators and steam turbines capable of producing 523 MW of power. There would be two 150-foot exhaust stacks for the generating units and another of the same height for the auxiliary boiler.

Water from Lake Winnebago would be used for steam generation and cooling. Steam would be created from waste heat from exhaust gases from the combustion of natural gas at the turbines. Under peak load summer conditions, about 6.4 million gallons per day (MGD) would be withdrawn into a new intake structure and pipe and pumped through a new water supply line approximately 5.1 to 5.7 miles to the power plant site. About 1.0 MGD would be discharged back to the lake via a new discharge pipeline. The cooling tower blowdown water would be combined with treated effluent from the city of Fond du Lac and discharged into the lake through an existing outfall structure maintained and operated by the city of Fond du Lac.

At the Scott Road Site, all new transmission construction needed to interconnect the new plant to the transmission grid would be located on the plant site. The South Fond du Lac-Edgewater 345 kV line passes directly over the proposed site. A new double-circuit 345 kV transmission line, approximately 2,800 feet in length, would be needed to interconnect a plant built at the River Road Site to the South Fond du Lac-Edgewater transmission line.

Natural gas would be supplied to either plant site through a new 12-inch steel natural gas pipeline, approximately 1.6 to 2.3 miles in length (depending on the site). The new pipeline, which would be built by ANR or Calpine, would require construction authorization from the Federal Energy Regulatory Commission (FERC).

Environmental Issues

Air

Calpine applied for an air pollution control permit for the proposed plant. Modeling analyses predict that the power plant, with the Best Available Control Technologies (BACT) implemented, would remain in compliance with the National Ambient Air Quality Standards (NAAQS). The maximum predicted increases for nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM/PM_{10}), and carbon monoxide (CO) would be less than the respective allowable Prevention of Significant Deterioration (PSD) increment and PSD monitoring *de minimus* concentrations.

Water

The surface water withdrawal system would include an intake structure and pipe, zebra mussel control, and a pump station. Calpine would construct the surface water withdrawal system and after construction is complete, the city of Fond du Lac would assume ownership and operation of the system.

Approximately 3.6 MGD (30-day average) would be used for cooling of the gas turbines, make-up water for the cooling tower, and make-up for the steam cycle. The projected maximum consumptive water use for the proposed power plant is about 0.1 percent of the total discharge from the Lake Winnebago watershed.

Water withdrawal for the project would not be expected to have adverse effects on existing uses of the lake, such as recreational boating, fishing, public and private water supplies, navigation and scenic beauty.

Dredging activities necessary to install and maintain the water intake and pipe would disrupt the lake bottom and cause increased turbidity within the immediate area. This could disrupt the aquatic flora and fauna (especially fish) habitat in the vicinity of the construction site. Surveys indicate that the lake bottom in the area that would be disturbed does not have an abundance of aquatic vascular plants or a large invertebrate population. The location of the intake structure is not known to contain unique habitat, spawning areas, or threatened or endangered species. Mitigation measures, such as the use of silt curtains and prohibition of dredging during fish spawning season would also help to minimize potential impacts to aquatic life.

The discharge to Lake Winnebago would be a combination of the cooling tower blowdown from the Fond du Lac Energy Center and the existing discharge from the city of Fond du Lac publicly-owned treatment works (POTW). During the warmest months the year, modeling indicates that the combined effluent, under expected conditions, would be cooler than the lake temperature. During the remainder of the year, the temperature of the blowdown water is expected to be cooler than the 87 degree Fahrenheit (ºF) thermal limit calculated by the DNR.

Construction of the water supply and discharge lines through the urban area between the lake and USH 141 is not expected to cause major resource impacts because the proposed corridor is highly disturbed and Calpine would directionally bore the facilities under the East Branch of the Fond du Lac River. However, construction of the water lines and natural gas pipeline parallel to the Wild Goose State Trail (if the River Road Site were approved) would greatly disturb some remnants of mesic prairie that are present along the former railroad grade.

Vegetation and Wildlife

Both sites are located on silty clay-loam soils that are planted in soybeans or corn in drier years. Common agricultural weeds are present across both sites. The Scott Road Site supports a line of trees along a portion of its northern boundary. Several low-growing brushy tree lines criss-cross the River Road Site. Drainage swales and seasonally wet basins are present on both sites, although they comprise about 2.6 acres on the River Road Site, compared to less than one acre on the Scott Road Site.

No rare or unusual plant or animal communities or species are present on or near either of the two alternative sites. Construction of both the water and natural gas facilities for the River Road Site would disrupt mesic prairie remnants along the Wild Goose State Trail.

Land Use

The project appears to be consistent with local land use plans. Although both areas are currently farmed, they are located in areas where commercial and industrial development is expanding. Construction of the new USH 151 Fond du Lac bypass will begin within the next few years. The alignment for the new highway and interchange with the existing USH 151 roadway encroaches on the northwest corner of the River Road

Site. When this highway is completed, farming will no longer be possible in several of the fields adjacent to the site.

There are several residences located quite close to the Scott Road Site. In fact the Hoehnen residence is within 65 feet of the site boundary. The closest residences to the River Road Site are located about 1,000 feet from the site along Willow Lawn Road and south on River Road.

Calpine and the town of Fond du Lac have been negotiating an agreement for use of the Scott Road Site that includes conditions regarding noise, landscaping, lighting, and several other topics. Although no agreement has been negotiated for the River Road Site, Calpine and the town are confident that a similar agreement could be reached for that location.

Local Community Services

The power plant facility is expected to be self-sufficient except for emergency services. Fire suppression water would be stored in tanks on-site as raw water. No additional police or fire protection beyond what the town of Fond du Lac currently provides would be necessary.

Fogging and Icing

The cooling tower for the proposed plant at either site would consist of twelve cells located in structures oriented north-south at both sites. Based on modeling, fogging and icing from the cooling tower located at either site would be expected to affect primarily the areas southwest of the proposed plant. For the Scott Road Site, the areas most greatly affected would include Scott Road and the area around the East Branch of the Fond du Lac River and the Milton Scott residence. For the River Road Site, ground fog and possible icing would affect an area near CTH D. With the possible exception of CTH D, it is not anticipated that any major roadways in the area, such as USH 151, USH 41, Pioneer Road, or Hickory Road would be impacted by fogging or icing from cooling towers at either site.

Noise

Most of the noise caused by the construction equipment would be much greater than the ambient noise levels at the Scott Road or River Road Sites. However, these noise sources would be temporary. Operation of the plant at the Scott Road Site would result in a moderate to substantial increase in the perceptible dBA-weighted noise levels for most the residences within 0.25 mile of the site and little to no change in low-frequency sound levels. At the River Road Site, the noise produced by the existing South Fond du Lac power plant, when operating, would mask any incremental noise increase caused by operation of the proposed Calpine plant. When the existing South Fond du Lac plant is off-line, there would be a small increase in the perceptible dBA-weighted noise levels during the afternoon and early evening hours.

The applicant and the town of Fond du Lac have agreed on dBA noise limits at the site boundaries. Calpine intends to construct a building to enclose the major noise producing equipment. Thus, the sound level projections provided in the application and analyzed in this document would be further reduced.

Visual

Although the new plant would initially be a large new feature in the local visual landscape, over time it would blend in with other commercial and industrial developments that are expanding into the agricultural transition area bordering the southwest side of the city of Fond du Lac. The approved USH 151 bypass will substantially change the character of the area as it crosses through this area.

Historic Properties

There are no known historic or archeological resources within the sites or the proposed corridors for the water supply and discharge lines, the natural gas pipeline, or the transmission facilities.

Commission Decisions

The Commission, in reviewing Calpine's application for a CPCN, will decide, among other issues, whether to build the plant, where to build the plant and its associated water and transmission facilities, and whether the plant would have an effect on regional competition in the power plant market. If the Commission approves the proposed Fond du Lac Energy Center, it would also determine whether to impose any conditions on the construction or operation of the facility.